



# INTRODUCTION

- Our coding problems are set in a fictitious planet, and revolves around the emperor of the planet - King Shan
- In these problems, you have to write code to model out the family tree of King Shan. There are 4 problems that revolve around the family tree. You can choose to solve any of the four problems.
- It's not just about getting the output right. We look for well modelled, readable, extensible code that follows good OOPS concepts. Having unit tests and build scripts would also factor in your evaluation.

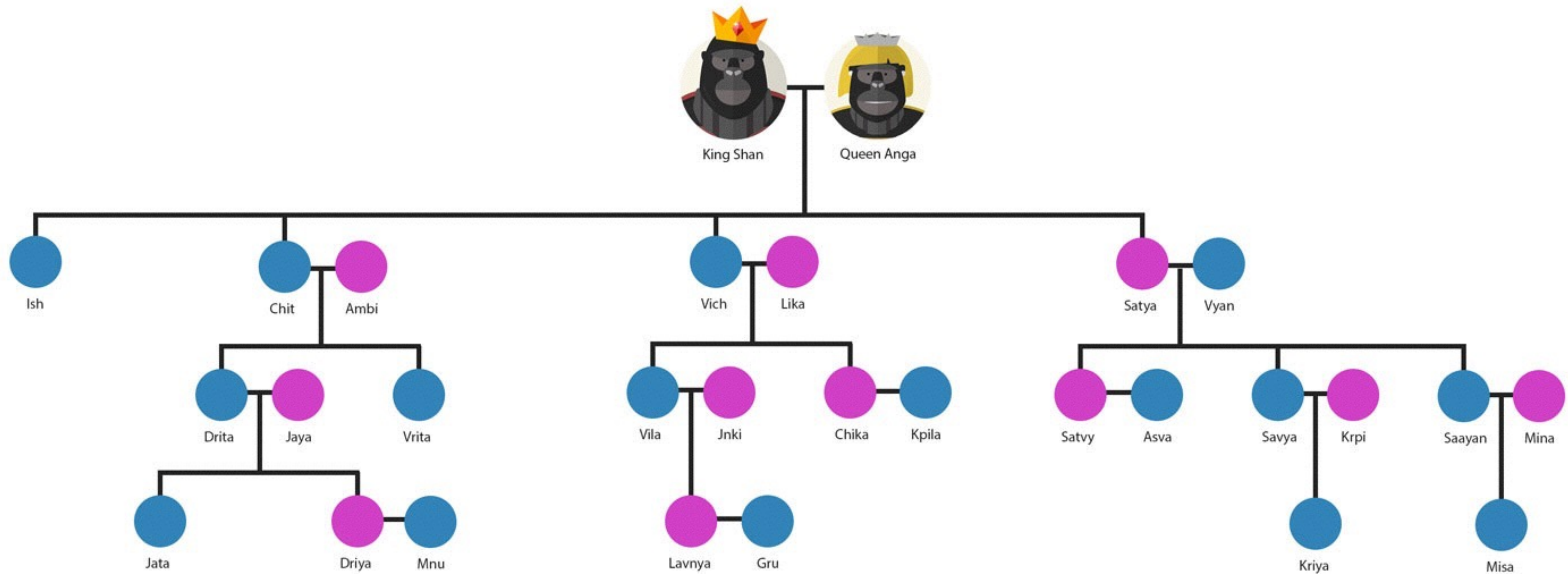
# PROBLEM CONTEXT

Our story is set in the planet of Lengaburu.....in the distant, distant galaxy of Tara B. And our protagonists are King Shan, Queen Anga & their family.

King Shan is the emperor of Lengaburu and has been ruling the planet for the last 350 years (they have long lives in Lengaburu, you see!). Let's write some code to get to know the family



# FAMILY TREE



# PROBLEM 1: MEET THE FAMILY

Model out the Shan family tree so that when given a 'name' and a 'relationship' as an input, the output are the people that correspond to the relationship.

Simple, right? But remember.. our evaluation is based not only on getting the right output, but on how you've written your code

## Sample Input & Output

Input: Person = Ish; Relation = Brothers  
Expected Output: Chit, Vich

# PROBLEM 2: A NEW BORN

There are some expectant mothers in the Shan family. Your code should be able to add a child into a particular family in the tree.

After that, when given a 'name' and a 'relationship' as an input, the output should be the person/people that correspond to the relationship.

## Sample Input & Output

Input: Mother = Lavanya; Daughter = Vanya  
Input: Person = Jnki; Relation = Grandchildren  
Expected Output: Vanya

# PROBLEM 3: THE GIRL CHILD

King Shan loves his family but has a soft corner for his granddaughters and great-granddaughters. At every family get-together he bestows gifts to the mother with the most girl children. Write code to determine which mother has the most girl children.

In addition, you should be able to add a child into a particular family in the tree.

## ↕ Sample Input & Output

Expected Output: Jaya, Jnki, Satya,  
Lika

Input: Mother = Jaya; Daughter = Drini  
Expected Output: Jaya



# PROBLEM 4: WHO'S YOUR DADDY?

Since the empire has been around for four generations, there are many folks in Lengaburu who do not know the relationship between the royalty. So, given two names as input, the output should be the relationship between the two.

## Sample Input & Output

Input: Person = Kriya; Relative =  
Saayan  
Expected Output: Paternal Uncle



# RELATIONSHIPS TO HANDLE

There are many relations that could exist, but at a minimum, your code needs to handle these relationships

| Relationships | Paternal uncle                                     | Maternal uncle                                    | Paternal aunt                                   | Maternal aunt                                   | Sister-in law                              | Brother-in-law                                 | Cousins                       | Father | Mother | Children | Son | Daughter | Brothers | Sisters | grand daughter |
|---------------|--|---|---|---|--|--|-------------------------------|--------|--------|----------|-----|----------|----------|---------|----------------|
| Definition    | Father's brothers,<br><br>Father's brother-in-laws | Mother's brother,<br><br>Mother's brother-in-laws | Father's sister,<br><br>Father's sister-in-laws | Mother's sister,<br><br>Mother's sister-in-laws | Spouse's sisters,<br><br>Wives of siblings | Spouse's brothers,<br><br>Husbands of siblings | Children of parent's siblings |        |        |          |     |          |          |         |                |

# SUBMITTING CODE

1. Please compress the file before upload. We accept .zip, .rar, .gz and .gzip
2. Name of the file should be the problem number you are solving. For e.g. if you have solved problem 3, please name your file 'problem 3.zip'. If you have solved problem 1 and 2, please name it 'problem12.zip' etc..
3. Upload the file in a way that makes it easy for us to get it running. This will factor into your evaluation.
4. Usage of non-essential 3rd party libraries will detrimentally affect your evaluation.

# NEED HELP?

1. We know it's possible you may have more questions on the coding challenges. So we're available on our Slack chat channel for you. You can come in and ask questions and get all the support you need.
2. [Click here](#) to get an invite to Slack or just mail [devs@geektrust.in](mailto:devs@geektrust.in) with subject 'add to slack'.